

ABSTRACT OF THE DISCLOSURE

An indoor air quality module includes an ultraviolet light source located between two titanium dioxide coated honeycombs. When photons of ultraviolet light are absorbed by the titanium dioxide coating, reactive hydroxyl radicals are formed that attack and oxidize contaminants in the air to water, carbon dioxide, and other substances. A shield is positioned outside each of the honeycombs to minimize the direct leakage of ultraviolet light from the module. The height of each shield depends on the distance between each shield and the ultraviolet light source and the maximum angle that ultraviolet light can pass through the honeycomb without any reflection on the surface of the honeycomb. Any ultraviolet light that directly leaks from the honeycomb contacts the shield and reflects towards honeycomb, minimizing the direct leakage of ultraviolet light from the module and increasing the photocatalytic rate of the contaminants.

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